

U.S. ENVIRONMENTAL PROTECTION AGENCY  
POLLUTION/SITUATION REPORT  
Hickman Creek Fish Kill - Removal Polrep  
Final Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region IV

**Subject:** POLREP #6  
Final POLREP  
Hickman Creek Fish Kill

Alexandria, TN  
Latitude: 36.0812500 Longitude: -86.0319850

**To:** James Webster, USEPA R4 ERRPPB  
Barry Brawley, TDEC

**From:** Matthew Huyser, FOSC  
**Date:** 12/9/2021  
**Reporting Period:** 9/8/2021 - 12/8/2021

## 1. Introduction

### 1.1 Background

|                            |              |                                |                |
|----------------------------|--------------|--------------------------------|----------------|
| <b>Site Number:</b>        | C4K6         | <b>Contract Number:</b>        |                |
| <b>D.O. Number:</b>        |              | <b>Action Memo Date:</b>       | 9/17/2021      |
| <b>Response Authority:</b> | CERCLA       | <b>Response Type:</b>          | Emergency      |
| <b>Response Lead:</b>      | EPA          | <b>Incident Category:</b>      | Removal Action |
| <b>NPL Status:</b>         | Non NPL      | <b>Operable Unit:</b>          |                |
| <b>Mobilization Date:</b>  | 8/8/2021     | <b>Start Date:</b>             | 8/8/2021       |
| <b>Demob Date:</b>         | 11/29/2021   | <b>Completion Date:</b>        | 12/4/2021      |
| <b>CERCLIS ID:</b>         | TNN000420652 | <b>RCRIS ID:</b>               |                |
| <b>ERNS No.:</b>           |              | <b>State Notification:</b>     | 8/8/2021       |
| <b>FPN#:</b>               |              | <b>Reimbursable Account #:</b> |                |

#### 1.1.1 Incident Category

Emergency

#### 1.1.2 Site Description

Hickman Creek is a freshwater stream that flows through Alexandria, DeKalb County, Tennessee. The creek is generally 20 to 30 feet wide and 1 to 6 inches deep in the town; it discharges to the Caney Fork River near Gordonsville, Smith County, Tennessee. Alexandria, Tennessee, is a small town of approximately 1000 residents. After exiting the town, the creek flows primarily through rural residential and agricultural properties.

#### 1.1.2.1 Location

The release location was at Hickman Creek, near 330 Edgewood Street, Alexandria, DeKalb County, Tennessee. The extent of downstream impact was estimated at 0.9 miles by 8/11/2021.

#### 1.1.2.2 Description of Threat

A discharge of unknown material resulted in a fish kill that was first reported on 8/7/2021. In addition, low dissolved oxygen has been reported as well as water discoloration of black, grey and brown. Suspected sources include water discharges from a manufacturing facility (MarQ Labs) or underground storage tanks behind a former cheese factory building. The MarQ Labs facility mixes and packages cosmetic products, primarily self-tanning products and previously hand sanitizer; wastewater discharge may include acetone, formic acid, and alcohol.

#### 1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

See POLREP #1 for Preliminary Removal Assessment Results

## 2. Current Activities

### 2.1 Operations Section

#### 2.1.1 Narrative

##### TREATMENT SYSTEM DESIGN

The OSC determined that a treatment system would be capable of addressing more water from the sump at a lower cost than pumping and transporting offsite to a treatment facility. The OSC proposed the installation of a treatment system using the infrastructure of old concrete underground storage tanks behind the senior center on property owned by the Town of Alexandria. The town declined to allow this installation.

The OSC tasked START with designing a treatment system for the contaminated water from the pump. EPA ERT was included in design consultation meetings taking place on 8/23/2021 and 9/3/2021. Parameters for the design included low maintenance, remote sensing, no chemical inputs requiring daily tuning, gravity flow

to prevent spillage, and a 10,000 gallon-per-day flow rate minimum. The treated water would be discharged directly into Hickman Creek, and treatment objectives included SVOCs, VOCs, alcohols, and COD at or below upstream water quality conditions. The final design was settled on 9/17/2021, and a schematic was submitted by START on 9/20/2021. During this time, START was unsuccessful in locating a company capable or willing to conduct the bench-scale study to prove the process would meet the treatment objectives.

On 9/15/2021, TDEC provided a point of contact at Tennessee Tech University who could provide lab space for EPA and START to conduct the test. Arrangements were made with Tennessee Tech, and the bench-scale test was conducted from 10/5/2021 to 10/14/2021 in the Tennessee Tech Center for Management, Utilization and Protection of Water Resources. Pre-test and post-test samples were collected by START and transported to a laboratory for analysis. The post-test samples demonstrated that the treatment process had reduced Chemical Oxygen Demand to near background levels in the creek while also reducing metals concentrations, and both phenol and acetone were no longer detected. However, the pre-test samples also showed some reductions from the initial sump samples collected in August.

#### SUMP WATER REMOVAL AND DISPOSAL

The OSC directed ERRS to arrange for transport and disposal of water recovered from the sump at a rate of 25,000 gallons per week. Water was transported to a Valicor specialized wastewater treatment plant in Huntsville, Alabama. From 8/26/2021 to 11/29/2021, approximately 370,000 gallons were transported offsite for disposal.

On 9/13/2021, the ERRS contractor for EPA reported that the sump was mostly dry and water was only flowing intermittently. Tank 5 was reported to be nearly empty, and Tank 4 was reported as approximately half full. The OSC directed that the float switch be moved from Tank 5 to Tank 3, that Tanks 4 and 5 be isolated from the system, then emptied. Tanks 4 and 5 were demobilized the following week.

On 10/5/2021, the OSC discovered a clog in the equalization line between Tank 1 and Tank 2. The OSC directed ERRS to install a larger line from Tank 1 to Tank 2 to prevent overfills. Due to the low recharge rate in the sump, the OSC also directed ERRS to move the float switch to Tank 2 and isolate Tank 3. Tank 3 was demobilized on 10/28/2021.

Based on the successful results of the treatment bench scale test, the OSC directed ERRS on 10/21/2021 to begin ordering supplies for the treatment system and identify a source for the rentable tanks and equipment. ERRS solicited bids from three companies for these services, and a scoping meeting was held with one of the vendors on 10/25/2021. A selection was made the following week, and the selected vendor began preparing to optimize a mobile aeration tank to serve as a bioreactor. Based on available equipment and personnel, including the emptying and demobilization of Tanks 1 and 2, the nearest possible installation date was stated as the week of November 22. Due to the Thanksgiving holiday during this week, the OSC elected to schedule installation for the week of November 29.

#### INVESTIGATION AT MARQ LABS FACILITY

On 10/14/2021, the OSC observed vacuum excavation equipment at the MARQ facility and reported this to TDEC. TDEC visited the MARQ facility on 10/15/2021 and found that MARQ had hired contractors to continue exploring drainage lines outside the facility. The plans and findings of this work were not coordinated with TDEC or EPA.

On 11/12/2021, TDEC visited the MARQ facility and found open excavations outside, revealing piping, a concrete junction box, and contaminated soil. On 11/17/2021, MARQ and their contractors met virtually with EPA to communicate findings from their ongoing investigation. On 11/18/2021, the OSC and TDEC visited the MARQ facility to observe these excavations in person. The OSC recorded the following observations:

- A concrete junction box in the parking lot north of the facility has an 8-inch entering the box from the facility, an 8-inch pipe exiting to the east, and a 2-inch pipe exiting to the west. There was rebar on the top of the concrete box near the ground surface, indicating there may have previously been a concrete cover. The pipe on the east side was explored by a camera; the pipe turns 45 degrees to the south and links with another pipe that proceeds east under Edgewood Ave. Soil excavated from the box was sampled, staged, and covered by the contractor.

- A utility box with an iron lid labeled "water meter" on the west side of Edgewood Ave was opened to reveal two 8-inch pipes and one 2-inch pipe traveling from west to east. None of the pipes is a water supply line, and there was no water meter. The pipes were opened, and a camera was sent down both directions. The north pipe connects east to a buried brick sump near the MARQ building serving stormwater drainage; the north pipe travels south under Edgewood Ave, where the camera cannot proceed further due to an offset connection. The south pipe connects east to a buried pipe near the MARQ building and includes a tie-in to the 8-inch pipe from the junction box; this south pipe proceeds east under Edgewood Ave, where the camera cannot proceed due to silt obstruction. TDEC placed dye of different colors in both drain lines; neither of these dye colors was ever observed to surface by the time of this POLREP.

- The concrete slab outside the northeast corner of the MARQ building was excavated to reveal the three drainage pipes that head to Edgewood Ave, a brick sump that appears to serve as a stormwater junction, a drain pipe along the north wall which appears to serve for stormwater, and an 8-inch pipe full of sludge which heads from the building to the concrete junction box. The OSC directed START to collect a sample of sludge from the pipe and water from the brick sump.

In addition to the samples collected from the pipe and the brick sump, the OSC directed START to collect two other water samples: one from the sump from which water was being drawn by EPA operations into Tank 1, and a second from the seep as it enters Hickman Creek. The sample from the sump showed no detections of SVOCs, no detections of VOCs other than acetone at 26 ug/L, and low concentrations of metals several orders of magnitude below concentrations measured in August. The chemical oxygen demand (COD) was also only 28.4 mg/L which is closer to the background measured in Hickman Creek of 16.3 mg/L and close to the water treatment bench-scale post-treatment COD value of 23.8 mg/L. Based on these results, the OSC determined, in consultation with TDEC, that the water treatment system was no longer necessary. The OSC directed ERRS to empty and demobilize Tanks 1 and 2, and this was completed during the week of November 29. The OSC directed ERRS to remove the remaining debris that had been left at the Site from the response, remove the silt fencing that had been installed near the creek, and re-grade the gravel that had been installed as part of the response; these activities were completed on December 8.

## 2.1.2 Response Actions to Date

- Ongoing monitoring and sampling of Hickman Creek upstream and downstream
- Identified features and leaks in UST at senior center
- Conducted initial exploratory excavation for conveyance piping
- Installed and augmented downstream aeration and boom
- Identified seep entering creek
- Identified second concrete pad near UST
- Began tracer dye test on drain line from MarQ Labs building
- Identified direction of drain line from MarQ Labs and identified previously unknown USTs
- Conducted flush test to look for leaks in manway in creek bed
- Completed excavation of intercept trend and installed sump
- Completed installation of storage system including five frac tanks, recirculation pumps, and stop switch
- Conducted air monitoring to ensure no emissions impacts from the recirculation pumps
- Began hauling wastewater off-site for treatment
- Designed treatment system and completed bench-scale test to prove proof of concept
- Conducted final sampling event to verify that water quality in seep was at or near to the upstream conditions in Hickman Creek

## 2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

A signed access agreement was obtained from both MarQ Labs and the City of Alexandria to conduct response operations on their properties. A signed access agreement was also obtained from the residence to the south of the senior center due to the proximity of the sump to the property line. Neither MarQ Labs nor the City of Alexandria has assumed responsibility as the source.

On 8/12/2021, The OSC contacted the representative for MarQ Labs and provided notification that the groundwater that appeared to be the seep influencing the creek had been intercepted and would be recovered with the sump. On 8/13/2021. The OSC met with the representative for MarQ Labs and issued a Notice of Federal Interest letter based on the possibility that the seep in the creek and water being intercepted in the sump resulted from discharges from MarQ Labs to the drain line at the northeast corner of their building. The OSC asked if MarQ Labs would be assuming the response or operation and maintenance of the sump and storage; the representative for MarQ Labs declined and stated that the impacted water was not a result of discharge from their facility.

On 8/23/2021, TDEC conducted an inspection of the MARQ facility. On 9/7/2021, TDEC issued notices of violation for solid waste and hazardous waste compliance to MARQ, and on 9/8/2021, TDEC issued a notice of violation for industrial stormwater permitting. These notices include the requirement that the discharge of process wastewaters to floor drains with no known sewer connection must immediately cease. On 10/15/2021 and on 11/12/2021, TDEC conducted follow-up visits and confirmed that process wastewaters were being containerized in used totes and labeled.

## 2.1.4 Progress Metrics

Soil removed from the bottom of the sump was been set aside and sampled for waste disposal profiling and was disposed of at the Republic Middle Point Landfill in Murfreesboro, TN. Water recovered from the sump was transported off-site to a Valicor specialized wastewater treatment plant in Huntsville, AL.

| Waste Stream | Medium | Quantity           | Manifest # | Treatment                                      | Disposal   |
|--------------|--------|--------------------|------------|--|--|
| Soil         | Solid  | 5 tons (estimated) | n/a        |  | Republic Middle Point Landfill, Murfreesboro, TN |
|              |        |                    |            |  |  |
| Groundwater  | Liquid | 5,000 gallons      | n/a        | OnSite Environmental, Nashville, TN            |  |
| Groundwater  | Liquid | 5,000 gallons      | multiple   | Valicor Environmental Services, Huntsville, AL |  |

## 2.2 Planning Section

### 2.2.1 Anticipated Activities

There are no further response activities for the Site. A Removal Site Evaluation has been completed for the Site, and a recommendation for further action will be stated in the RSE Memorandum.

#### 2.2.1.1 Planned Response Activities

- Identify the source and composition of the release to Hickman Creek (COMPLETE)
- If there is an ongoing release, stop or divert the release to prevent further impacts (COMPLETE)
- Assess the impacted area of Hickman Creek (COMPLETE)
- Mitigate impacts to water quality to reduce the risk of further damage downstream (COMPLETE)
- Arrange for sustainable discharge system for groundwater from the sump (CANCELLED)
- Transfer operation and maintenance of sump from EPA to local or state operation (CANCELLED)

#### 2.2.1.2 Next Steps

There are no further next steps for this Site.

### 2.2.2 Issues

Elevated concentrations of lead at 2280 mg/kg were found in the sludge in the pipe near the MARQ Labs facility. Lead levels in the sump in August were measured at only 3710 ug/L in the water. A study of lead concentrations in the soil below ground surface was not conducted as part of the response.

Final cleanup efforts at the Site included ensuring that the sump behind the senior center was inaccessible for safety reasons but was not permanently closed in the event that it would be beneficial to future investigation and/or remediation efforts. The 12-inch pipe opening to the sump was cut off approximately

one foot below ground surface, and a lid was installed over the opening. The sump was then covered with soil and gravel to grade.

## 2.3 Logistics Section

There is no further information to report in this section.

## 2.4 Finance Section

### 2.4.1 Narrative

On 8/13/2021, a verbal request was made to increase the ERRS TO to \$100,000 and the START TOLIN to \$50,000. The request was later modified to \$150,000 and \$100,000, respectively, which is the limit of the OSC's warrant authority. The Emergency Response Action Memorandum was signed on 8/31/2021.

A verbal ceiling increase was received from the Superfund and Emergency Management Division Acting Director in order to begin hauling wastewater on 8/26/2021. The ceiling increase action memorandum was signed on 9/17/2021, which provided funds for hauling wastewater for offsite disposal plus the design, installation, and operation of an on-site treatment system.

### Estimated Costs \*

|                           | Budgeted            | Total To Date       | Remaining           | % Remaining   |
|---------------------------|---------------------|---------------------|---------------------|---------------|
| <b>Extramural Costs</b>   |                     |                     |                     |               |
| ERRS - Cleanup Contractor | \$680,000.00        | \$315,000.00        | \$365,000.00        | 53.68%        |
| EPA ERT                   | \$8,000.00          | \$5,000.00          | \$3,000.00          | 37.50%        |
| TAT/START                 | \$160,000.00        | \$150,000.00        | \$10,000.00         | 6.25%         |
| CONTINGENCY               | \$85,000.00         | \$0.00              | \$85,000.00         | 100.00%       |
| <b>Intramural Costs</b>   |                     |                     |                     |               |
|                           |                     |                     |                     |               |
| <b>Total Site Costs</b>   | <b>\$933,000.00</b> | <b>\$470,000.00</b> | <b>\$463,000.00</b> | <b>49.62%</b> |

\* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

## 2.5 Other Command Staff

### 2.5.1 Safety Officer

There is no information to report in this section.

### 2.5.2 Liaison Officer

There is no information to report in this section.

### 2.5.3 Information Officer

There is no information to report in this section.

## 3. Participating Entities

### 3.1 Unified Command

EPA entered Unified Command with TDEC, DeKalb County EMA, and City of Alexandria. The final operations briefing was held on 11/24/2021.

### 3.2 Cooperating Agencies

TDEC  
TWRA  
DeKalb County EMA  
City of Alexandria  
Smith Utility District

## 4. Personnel On Site

All personnel have demobilized from the Site.

## 5. Definition of Terms

CST - Civil Support Team  
EMA - Emergency Mangement Agency  
EPA - Environmental Protection Agency  
ERRS - Emergency Rapid Response Services  
START - Superfund Technical Assessment and Response Team  
TDEC - Tennessee Department of Environment and Conservation  
TEMA - Tennessee Emergency Management Agency  
TWRA - Tennessee Wildlife Resources Agency

bgs - below ground surface

DO - dissolved oxygen

FOSC - Federal On-Scene Coordinator

gpm - gallons per minute  
IAP - incident action plan  
LDB - left descending bank  
mg/L - milligrams per liter  
mm - millimeter  
POTW - publicly-owned treatment works  
ppm - parts per million  
RDB - right descending bank  
SITREP - situation report  
SOSC - State On-Scene Coordinator  
SVOC - semi-volatile organic compounds  
UST - underground storage tank  
VOC - volatile organic compounds  
WWTP - wastewater treatment plant

## **6. Additional sources of information**

### **6.1 Internet location of additional information/report**

TEMA has established a shared document repository on their cloud server for collection of photos and other digital media files. Response partners will be able to upload and download files in a central location without being subject to email server limitations.

### **6.2 Reporting Schedule**

There will be no further POLREPs for this Site.

## **7. Situational Reference Materials**

There is no information to report in this section.